Claims:

1. A chimeric antibody conjugate comprising an antigen binding region of a non-human antibody and an immunoglobulin constant region which comprises at least one C_H domain ~~or epitope thereof~~, with the proviso that the constant region is not a naturally occurring F_C fragment.

2. A chimeric antibody conjugate according to claim 1 in which the non-human antigen binding region comprises or consists of a non-human Fab fragment or part thereof.

3. A chimeric antibody conjugate according to claim 1 ~~or claim 2~~ in which the non-human antigen binding region comprises or consist of an scFv fragment.

4. A chimeric antibody conjugate according to ~~any one of claims 1 to 3~~ in which the non-human antigen binding region is derived from a mouse.

5. A chimeric antibody conjugate according to ~~any one of claims 1 to 4~~ in which the constant region is derived from a human antibody.

6. A chimeric antibody conjugate according to ~~any one of claims 1 to 5~~ in which the constant region comprises one or more constant domains derived from an IgM antibody.

7. A chimeric antibody conjugate according to claim 6 in which the constant region comprises one or more $C_H3\mu$ domains.

8. A chimeric antibody conjugate according to ~~any one of claims 1 to 5~~ in which the constant region comprises one or more constant domains derived from an IgG antibody.

9. A chimeric antibody conjugate according to claim 8 in which the constant region comprises one or more $C_H3\gamma$ domains.

10. A chimeric antibody conjugate according to ~~any one of claims 1 to 5~~ Claim 1 in which the constant region comprises one or more constant domains derived from an IgA antibody.

11. A chimeric antibody conjugate according to ~~any one of claims 1 to 10~~ Claim 1 in which the constant region comprises a non-naturally occurring combination of C_H domains or epitopes thereof.

12. A chimeric antibody conjugate according to ~~any one of claims 1 to 11~~ Claim 1 in which the non-human antigen binding region binds to an epitope of an infectious agent selected from dengue virus, rubella virus, herpes virus, parvovirus, human glycophorin, *Rickettsia sibirica, Burkholeria pseudomallei, Salmonella typhi* or *paratyphi, Leptospira interrogans, Plasmodium falciparum/vivax,* Japanese encephalitis virus, Yellow fever virus, *Bordetella pertussis/parapertussis, Candida albicans/kruzei,* Varicella zoster virus, HIV, Hepatitis viruses, Human papilloma virus, Epstein-Barr virus, Ross River virus, *Brucella abortis,* Human herpesvirus-6, Parvovirus B19, *Coxiella burnettii,* Herpes simplex viruses 1&2, *Rickettsia rickettsii, Conori australis,* and *Rickettsia tsutsugamushi.*

13. A recombinant polynucleotide molecule comprising a sequence encoding a non-human V_H region, a sequence encoding a non-human V_L region, a sequence encoding a flexible linker positioned between the V_H region sequence and the V_L region sequence, and a heterologous sequence encoding a C_H domain or epitope thereof.

14. A recombinant polynucleotide molecule according to claim 13 in which the heterologous sequence encodes a human C_H domain.

15. A recombinant polynucleotide molecule according to claim 13 ~~or claim 14~~ in which the C_H domain sequence is linked to the 3' end of the V_L or V_H sequence.

16. A recombinant polynucleotide molecule according to ~~any one of claims 13 to 15~~ Claim 13 in which the polynucleotide molecule includes a control

sequence which directs the synthesis of both the V_L and V_H polypeptide regions.

17. A recombinant polynucleotide molecule according to claim 16 in which the control sequence is the lac promoter.

18. A recombinant polynucleotide molecule according to ~~any one of claims 13 to 17~~ claim 13 in which the molecule includes a sequence encoding a leader peptide which directs the synthesised polypeptide chains to the host cell periplasm.

19. A recombinant polynucleotide molecule according to claim 18 in which the leader sequence is the pel B sequence.

20. A recombinant polynucleotide molecule comprising a sequence encoding a non-human V_L region, a sequence encoding a non-human C_L region, a sequence encoding a non-human V_H region, a heterologous sequence encoding a C_H domain or epitope thereof, and optionally a sequence encoding a non-human C_H1 region.

21. A recombinant polynucleotide molecule according to claim 21 in which the heterologous sequence encodes a human C_H domain.

22. A recombinant polynucleotide molecule according to claim 20 ~~or claim 21~~ in which the V_L and C_L sequences are linked together so that the V_L and C_L regions are expressed as a single polypeptide.

23. A recombinant polynucleotide molecule according to ~~any one of claims 20 to 22~~ claim 20 in which the V_H and C_H1 sequences are linked together so that the V_H and C_H1 regions are expressed as a single polypeptide.

24. A recombinant polynucleotide molecule according to ~~any one of claims 20 to 23~~ claim 20 in which the polynucleotide molecule includes a control sequence which directs the synthesis of both the V_L-C_L and V_H-C_H1 polypeptide regions.

25. A recombinant polynucleotide molecule according to claim 24 in which the control sequence is the lac promoter.

26. A recombinant polynucleotide molecule according to ~~any one of claims 20 to 25~~ Claim 20 in which the polynucleotide molecule includes a sequence encoding a leader peptide which directs the synthesised polypeptide chains to the host cell periplasm.

27. A recombinant polynucleotide molecule according to claim 26 in which the leader sequence is the pel B sequence.

28. A recombinant polynucleotide molecule according to ~~any one of claims 20 to 27~~ Claim 20 in which the heterologous C_H domain sequence is linked to the V_L-C_L sequences or the V_H-C_H1 sequences so that the expressed heterologous C_H domain is attached to the V_L-C_L polypeptide or the V_H-C_H1 polypeptide.

29. A vector comprising a poynucleotide according to ~~any one of claims 13 to 29~~ Claim 13.

30. A bacterial, yeast, insect or mammalian host cell transformed with a vector according to claim 29.

31. A method of producing a chimeric antibody conjugate which comprises culturing a host cell according to claim 30 under conditions enabling the expression of the conjugate and optionally recovering the conjugate.

32. A chimeric antibody conjugate produced by a method according to claim 31.

33. A method for detecting an antibody in a biological sample which involves comparing the level of detection obtained with the biological sample to the level of detection obtained with a positive control, wherein the positive control comprises a chimeric antibody conjugate according to ~~any one of claims 1 to 12~~ Claim 1.

34. A method according to claim 33 in which the biological sample is a human biological sample.

35. A method according to claim 33 ~~or claim 34~~ in which the antibodies to be detected are antibodies characteristic of a disease selected from dengue fever, japanese encephalitis, rubella, spotted fever, herpes infection, parvovirus infections, melioidosis, typhoid, leptospirosis, malaria, yellow fever, whooping cough, systemic candidiasis/thrush, chicken pox, shingles, AIDS, hepatitis, liver cancer, cervical cancer, infectious mononucleosis, nasopharyngeal carcinoma, Ross River fever, brucella, exanthum subitum (sixth disease/roseola infantum), erythema ingfectiosum (fifth disease), Q fever, cold sores, genital herpes, spotted fever and scrub typhus.

36. A method according to ~~any one of claims 33 to 35~~ claim 33 in which the antibody is an IgM antibody.

37. A method according to ~~any one of claims 33 to 35~~ claim 33 in which the antibody is an IgG antibody.

38. A method according to ~~any one of claims 33 to 35~~ claim 33 in which the antibody is an IgA antibody.

39. A bifunctional molecule for use in labelling an antibody derived from a first species, the bifunctional molecule comprising a binding region which binds to the antibody of the first species or to one or more groups provided thereon, and a constant region derived from an antibody of a second species, the constant region comprising at least one C_H domain or an epitope thereof.

40. A bifunctional molecule according to claim 39 in which the binding and constant regions are separated by a linker molecule.

41. A bifunctional molecule according to claim 40 in which the linker molecule is a peptide of between 1 and 20 amino acids in length.

42. A bifunctional molecule according to claim 41 in which the linker molecule is a peptide of between 2 and 5 amino acids in length.

43. A bifunctional molecule according to ~~any one of claims 39 to 42~~ Claim 39 in which the binding region is not derived from an antibody.

44. A bifunctional molecule according to ~~any one of claims 39 to 43~~ Claim 39 in which the binding region binds directly to the antibody derived from the first species.

45. A bifunctional molecule according to claim 44 in which the binding region is derived from a protein selected from the group consisting of, *Streptococcal* protein G, *Staphylococcal aureus* protein A and *Peptostreptococcus magnus* protein L.

46. A bifunctional molecule according to claim 45 in which the binding region comprises fragment B of *Staphylococcus aureus* protein A.

47. A bifunctional molecule according to claim 44 in which the binding region comprises a mouse Fc γ receptor or fragment thereof.

48. A bifunctional molecule according to claim 44 in which the binding region comprises a histidine rich glycoprotein.

49. A bifunctional molecule according to ~~any one of claims 39 to 43~~ Claim 39 in which the binding region binds to one or more groups provided on the antibody of the first species.

50. A bifunctional molecule according to claim 49 in which the group(s) is a biotin molecule and the binding region comprises streptavidin or a fragment thereof.

51. A bifunctional molecule according to ~~any one of claims 39 to 50~~ Claim 39 in which the antibody constant region is not a naturally occurring Fc fragment.

52. A bifunctional molecule according to ~~any one of claims 39 to 51~~ Claim 39 in which the constant region comprises one or more constant domains derived from an IgM antibody.

53. A bifunctional molecule according to claim 52 in which the constant region comprises one or more $C_H3\mu$ domains.

54. A bifunctional molecule according to ~~any one of claims 39 to 51~~ Claim 39 in which the constant region comprises one or more constant domains derived from an IgG antibody.

55. A bifunctional molecule according to claim 54 in which the constant region comprises one or more $C_H3\gamma$ domains.

56. A bifunctional molecule according to ~~any one of claims 39 to 51~~ Claim 39 in which the constant region comprises one or more constant domains derived from an IgA antibody.

57. A bifunctional molecule according to ~~any one of claims 39 to 56~~ claim 39 in which the antibody constant region comprises or consists of a non-naturally occurring combination of immunoglobulin C_H domains or epitopes thereof.

58. A bifunctional molecule according to ~~any one of claims 39 to 56~~ claim 39 in which the antibody constant region comprises or consists of a single C_H domain.

59. A bifunctional molecule according to ~~any one of claims 39 to 58~~ Claim 39 in which the second species is a human.

60. An isolated polynucleotide encoding a bifunctional molecule according to ~~any one of claims 39 to 59~~ Claim 39.

61. A vector comprising a polynucleotide according to claim 60.

62. A bacterial, yeast, insect or mammalian host cell transformed with a vector according to claim 61.

63. A method of producing a bifunctional molecule which comprises culturing a host cell according to claim 62 under conditions enabling the expression of the bifunctional molecule and optionally recovering the bifunctional molecule.

64. A bifunctional molecule produced by a method according to claim 63.

65. A complex formed between (i) an antibody or biologically active fragment thereof derived from a first species and (ii) a bifunctional molecule, the bifunctional molecule comprising a binding region which binds to the antibody of the first species or to one or more groups provided thereon, and a constant region derived from an antibody of a second species, the constant region comprising at least one C_H domain or an epitope thereof.

66. A complex according to claim 65 in which the binding region has a K_D for the antibody of the first species, or a group provided thereon, of less than 10^{-6} M.

67. A complex according to claim 66 in which the binding region has a K_D for the antibody of the first species, or a group provided thereon, of less than 10^{-8}M.

68. A complex according to ~~any one of claims 65 to 67~~ claim 65 in which the bifunctional molecule binds directly to the antibody derived from the first species.

69. A complex according to claim 68 in which the binding region is derived from a protein selected from the group consisting of, *Streptococcal* protein G, *Staphylococcal aureus* protein A and *Peptostreptococcus magnus* protein L.

70. A complex according to claim 69 in which the binding region comprises fragment B of *Staphylococcus aureus* protein A.

71. A complex according to claim 68 in which the binding region comprises a mouse Fc γ receptor or fragment thereof.

72. A complex according to claim 68 in which the binding region comprises a histidine rich glycoprotein.

73. A complex according to any ~~one of claims 65 to 67~~ Claim 65 in which the binding region binds to one or more groups provided on the antibody of the first species.

74. A complex according to claim 73 in which the group(s) is a biotin molecule and the binding region comprises streptavidin or a fragment thereof.

75. A complex according to ~~any one of claims 65 to 74~~ Claim 65 in which the constant region comprises one or more constant domains derived from an IgM antibody.

76. A complex according to claim 75 in which the constant region comprises one or more $C_H3\mu$ domains.

77. A complex according to ~~any one of claims 65 to 74~~ Claim 65 in which the constant region comprises one or more constant domains derived from an IgG antibody.

78. A complex according to claim 77 in which the constant region comprises one or more $C_H3\gamma$ domains.

79. A complex according to ~~any one of claims 65 to 74~~ Claim 65 in which the constant region comprises one or more constant domains derived from an IgA antibody.

80. A complex according to ~~any one of claims 65 to 79~~ Claim 65 in which the antibody constant region comprises or consists of a non-naturally occurring combination of immunoglobulin C_H domains or epitopes thereof.

a 81. A complex according to ~~any one of claims 65 to 79~~ Claim 65 in which the antibody constant region comprises or consists of a single C_H domain.

a 82. A complex according to ~~any one of claims 65 to 81~~ Claim 65 in which the first species is a rat or mouse.

a 83. A complex according to ~~any one of claims 65 to 82~~ Claim 65 in which the second species is a human.

a 84. A method for detecting an antibody in a biological sample which involves comparing the level of detection obtained with the biological sample to the level of detection obtained with a positive control, wherein the positive control comprises a complex according to ~~any one of claims 65 to 83~~ Claim 65.

a 85. A method according to claim 84 in which the biological sample is a human biological sample.

a 86. A method according to claim 84 ~~or claim 85~~ in which the antibodies to be detected are antibodies characteristic of a disease selected from dengue fever, Japanese encephalitis, rubella, spotted fever, herpes infection, parvovirus infections, melioidosis, typhoid, leptospirosis, malaria, yellow fever, whooping cough, systemic candidiasis/thrush, chicken pox, shingles, AIDS, hepatitis, liver cancer, cervical cancer, infectious mononucleosis, nasopharyngeal carcinoma, Ross River fever, brucella, exanthum subitum (sixth disease/roseola infantum), erythema infectiosum (fifth disease), Q fever, cold sores, genital herpes, spotted fever and scrub typhus.

a 87. A method according to ~~any one of claims 84 to 86~~ Claim 84 in which the antibody is an IgM antibody.

a 88. A method according to ~~any one of claims 84 to 86~~ Claim 84 in which the antibody is an IgG antibody.

a 89. A method according to ~~any one of claims 84 to 86~~ Claim 84 in which the antibody is an IgA antibody.